DEAD RUN BRIDGE
George Washington Memorial Parkway, spanning Dead Run
McLean Vicinity
Fairfax County
Virginia

HAER NO. VA-70

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

PHOTOGRAPHS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Department of the Interior
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I. INTRODUCTION

Location:	George Washington Memorial Parkway milepost 0.430; 0.5 miles from Interstate 495; carries GWMP over Dead Run, a tributary of the Potomac River, near McLean, in Fairfax County, Virginia.
FHwA Structure No.:	3300-001P.
Date of Construction:	1960-1963.
Type:	Continuous steel girder bridge.
Designer:	Bureau of Public Roads, Region 15 Fairfax, Va in conjunction with National Park Service architectural staff.
Contractor:	Case Construction Company, Mt. Airy, Maryland.
Present Owner:	National Capital Region, National Park Service.
Present Use:	Carries non-commercial traffic over Dead Run.
Significance:	Built as part of a project to extend the GWMP closer to a proposed terminus at Great Falls, Virginia.
Project Information:	Documentation of the George Washington Memorial Parkway and Clara Barton Parkway was undertaken as a multi-year project by the Historic American Buildings Survey and the Historic American Engineering Record (HABS/HAER), a combined division of the National Park Service, Robert Kapsch, Chief. The project was sponsored by the Park Roads Program of the National Park Service, John Gingles, Deputy Chief, Engineering and Safety Services Division. The Project Supervisor was Sara Amy Leach, HABS Historian. Bridge reports were prepared by Elizabeth M. Nolin (1988); Michael P. Kucher (University of Delaware, 1993); and Jennifer P. Wentzien (University of Washington, 1994). HABS Report No. VA-69 prepared by Timothy Davis (University of Texas) provides an overview history of the entire parkway project. Jack E. Boucher and Jet Lowe produced the large-format photographs. The Washington-based summer 1994 documentation team was headed by landscape architect Tim Mackey (Harvard University, Graduate School of Design).

II. HISTORY

Dead Run Bridge was the last of the bridges necessary to connect the GWMP "with the Virginia circumferential highway."[1] The bridge was designed, bid and constructed under the same contract as Turkey Run Bridge (HAER No. VA-71). The two structures are of similar design. By the time the project for Dead Run and Turkey Run were let out to bid the Park Service seems to have resigned itself to reaching what is now Interstate 495.

The architectural design of the bridge reflects the popular aesthetic of the post-war period succinctly described by Christopher Tunnard as "the lighter and cleaner the silhouette, the better the design."[2] These ideals are expressed at this and other bridges of the period in the design of metal railings, cantilevered "T" shaped piers, and a reliance on exposed structural details for ornamentation. These ideals are in many ways the antithesis of those of Gilmore Clarke for earlier GWMP bridges, as expressed in the quote, "the more rugged the scenery and the surroundings, the more rustic may be the bridge."[3]

Modern engineering math and surveying techniques combined with a design philosophy that dictated a continuously curving road rather than a series of curves connected by tangents (straight sections). The horizontal curvature and sloped deck at Dead Run Bridge allow for continuous curvature of the roadway, an important principle of parkway design. These features are intended to provide the least visual interruption to the roadway and to the surrounding landscape.

Description

Dead Run Bridge is actually twin bridges which share abutments. Each bridge is a three span continuous steel girder bridge on concrete piers and abutments. The center spans of each bridge are 113' with outside spans of 90'. The overall length including wing walls is approximately 368'. The bridges curve on a radius of 1218.83'. The deck slopes a gentle 9' downward between its east to west abutments. Roadways are 24' wide with 2' low curbs on either side. Outside sidewalks are 5'-3" wide and inside high curbs are 2'-9" wide. The overall width of each deck is 36'. There is a 20'-6" wide open median strip between decks.

Blasting was used during excavation for the reinforced concrete spread footings. Footings support reinforced concrete abutments and piers. A pair of "T" shaped pier and cross beam assemblies support each bridge deck between abutments. Pier shafts were formed with steel "efco" forms. Concrete was supplied by the Virginia Concrete Corp. of Falls Church, Virginia. The spans are continuous steel girder and floor beam systems. The structural steel and steel bridge railing were fabricated by Atlas Iron and Machine Works. Joints are welded. The engineer also reported that it was difficult to find skilled bridge carpenters.[4] The BPR Laboratories conducted most of the materials testing for this and other GWMP bridges. The NPS specified a "foliage green" paint for the structural steel. Railings were black, seamless,

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[1]Bureau of Public Roads, "Final Construction Report, Project 1A17, 1A18."

[2]Christopher Tunnard, Man-made America: Chaos or Control?, New Haven, 1963, p.244.

[3]Gilmore Clarke, "Architecture of Short Span Bridges," from Arthur G. Hayden, The Rigid Frame Bridge, 1931, p. 227.

[4]Bureau of Public Roads, "Final Construction Report Project 1A17 and 1A18," 1963, p.6.

extra-strong, plain end, square cut steel pipe.[5]

The bridge is designed to carry a standard H-20 loading of the American Association of State Highway Officials. An H-20 loading accounts for a two axle truck with a gross weight of 20 tons and does not consider tractor trailer loading.[6] Construction was under BPR Standard Specifications F.P.-57. Final construction costs for the combined contract for Turkey Run Bridge and Dead Run Bridge totaled $835,111.93 with an additional $64,181 for construction engineering.[7]

Alterations

1974 deck replacement due to infiltration of exterior roadway salts. A 6.5" deck was replaced with and 8.25" deck (Project 1A39).

In 1976 the deck was repaired and a cathodic protection system was installed. The cathodic protection system employed a mixture of coke breeze and asphalt cement to provide corrosion control.[8] Cathodic protection is a method of corrosion control only recently applied to architectural structures. The principle is to create a low voltage current flowing in the opposite direction of that which is causing corrosion of the reinforcing steel.

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[5]Ibid.

[6]American Association of State Highway Officials, Standard Specifications for Highway Bridges, 7th edition, 1957.

[7]"Final Construction Report, Project 1A17 and 1A18."

[8]Federal Highway Administration, Office of Research, S.R. Spelman, "Design of Asphalt-Coke Breeze Paving Mixtures for Cathodic Protection Systems," May, 1976.

III. SOURCES

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Hayden, Arthur G. The Rigid Frame Bridge. John Wiley and Sons, Inc., New York. 1931. Article by Gilmore Clarke, "The Architecture of Short-Span Bridges," pp.219-240.

U.S. Department of Commerce, Bureau of Public Roads. Plans for Proposed Project 1A18, 1A41, 1A39. Microfiche reductions of original construction drawings on file at National Capital Region Park Headquarters, National Park Service, Washington D.C.

_____. "George Washington Memorial Parkway, Fairfax County, Virginia, Project 1A17, 1A18: Final Construction Report." Submitted by N. E. Mosbey, Resident Engineer, January 1963. On deposit at FHWA, Bridge Construction Office, remote storage facility, Sterling, Virginia.

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